

VU Research Portal

An organizational learning approach to the learning organization

Huysman, M.H.

published in

European Journal of Work and Organizational Psychology
2000

DOI (link to publisher)

[10.1080/135943200397905](https://doi.org/10.1080/135943200397905)

[Link to publication in VU Research Portal](#)

citation for published version (APA)

Huysman, M. H. (2000). An organizational learning approach to the learning organization. *European Journal of Work and Organizational Psychology*, 9(2), 133-145. <https://doi.org/10.1080/135943200397905>

General rights

Copyright and moral rights for the publications made accessible in the public portal are retained by the authors and/or other copyright owners and it is a condition of accessing publications that users recognise and abide by the legal requirements associated with these rights.

- Users may download and print one copy of any publication from the public portal for the purpose of private study or research.
- You may not further distribute the material or use it for any profit-making activity or commercial gain
- You may freely distribute the URL identifying the publication in the public portal ?

Take down policy

If you believe that this document breaches copyright please contact us providing details, and we will remove access to the work immediately and investigate your claim.

E-mail address:

vuresearchportal.ub@vu.nl

This article was downloaded by: [Vrije Universiteit, Library]

On: 20 May 2010

Access details: Access Details: [subscription number 907218003]

Publisher Psychology Press

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: Mortimer House, 37-41 Mortimer Street, London W1T 3JH, UK



European Journal of Work and Organizational Psychology

Publication details, including instructions for authors and subscription information:

<http://www.informaworld.com/smpp/title~content=t713684945>

An organizational learning approach to the learning organization

Marleen Huysman

To cite this Article Huysman, Marleen(2000) 'An organizational learning approach to the learning organization', European Journal of Work and Organizational Psychology, 9: 2, 133 – 145

To link to this Article: DOI: 10.1080/135943200397905

URL: <http://dx.doi.org/10.1080/135943200397905>

PLEASE SCROLL DOWN FOR ARTICLE

Full terms and conditions of use: <http://www.informaworld.com/terms-and-conditions-of-access.pdf>

This article may be used for research, teaching and private study purposes. Any substantial or systematic reproduction, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The accuracy of any instructions, formulae and drug doses should be independently verified with primary sources. The publisher shall not be liable for any loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

An organizational learning approach to the learning organization

Marleen Huysman

Delft University of Technology, The Netherlands

In this article the attempt is made to bridge the conceptual gap between the literature on the learning organization and that of organizational learning. Whereas the learning organization stream is mainly prescriptive, linking learning to improvement, the organizational learning stream analyses learning processes without paying much attention to its outcome. Until so far, the two streams operate highly independent from each other. We believe that more solid understandings of how organizations learn provide ideas on how this could be improved and thus could contribute to a more theoretical foundation of the learning organization. Our contribution lies predominantly in providing a conceptual framework to analyze and improve learning processes as ways to foster learning organizations.

Without doubt, management terms such as “organizational learning”, “learning capacity”, “the learning organization”, etc., have gained good currency among academics and organizational practitioners. One plausible explanation for this attention is that learning of organizations is generally seen as the solution to problems caused by hierarchical and bureaucratic organizations. With a learning organization, one generally refers to a specific type of organization that is organized—both culturally and structurally—such that innovation, flexibility, and improvement can be guaranteed. Literature on the learning organization perceives learning as worth striving for. Consequently, the literature predominantly focuses on providing best practices and models in order for consultants and managers to intervene. Its argument in short is as follows: Within today’s turbulent environments, only learning organizations are able to survive and thus gain competitive advantage (e.g., Garvin, 1993; Marquardt, 1996; Pedler, Burgoyne, & Boydell, 1991; Senge, 1990; Swieringa & Wierdsma, 1993).

Despite its popularity, the ideas concerning the learning organization more often than not lack a solid theoretical as well as empirical foundation. This is a

Requests for reprints should be addressed to M. Huysman, Delft University of Technology, De Vries van Heystplantsoen 2, 2628 RZ Delft, The Netherlands. Email: m.h.huysman@tbm.tudelft.nl

TABLE 1
Some differences between the learning organization and organizational learning

	<i>Organizational learning</i>	<i>Learning organization</i>
<i>Outcome</i>	Potential organizational change	Organizational improvement
<i>Motive</i>	Organizational evolution	Competitive advantage
<i>Writings</i>	Descriptive	Prescriptive
<i>Objective of writings</i>	Theory building	Intervention
<i>Stimulus</i>	Emergent	Planned
<i>Targeting audience</i>	Academic	Practice
<i>Scientific background</i>	Decision theories, organization studies	Organizational development, strategic management

clear disadvantage, as insights in the way organizations learn are a necessary precondition to derive at prescriptive arguments for how organizations *should* learn. In other words, in order to create a learning organization that is good in organizational learning, we first need to have more conceptual understandings about processes of organizational learning. Such an organizational learning perspective on the learning organization seems to be a fruitful combination. However, various authors have argued that there is a growing dichotomy between the two streams of research: the learning organization stream and the organizational learning stream (Easterby-Smith, Burgoyne, & Araujo, 1999; Huysman & van der Vlist, 1998; Tsang, 1997). These two streams represent two almost contrasting perspectives (see Table 1).

Whereas the literature on the learning organization lacks a theoretical and empirical foundation, the literature on organizational learning can be accused of being too conceptual. Another shortcoming of the literature on organizational learning is that its insights are scattered and unordered (Weick & Westley, 1996). Despite the growing number of process-related publications, it still seems to be difficult to gain a solid understanding of the details of learning processes. “The main conclusion is that after 30 years of effort, the scientific community devoted to organizational learning has not produced discernable intellectual progress” (Mackenzie, 1994, p. 251).

In this article, we will try to connect the two streams by introducing an organizational learning perspective on the learning organization. This will be done by first providing an integrative conceptual framework to assess organizational learning processes. This framework will then be used to derive at suggestions how to foster a “good learning organization”.

ORGANIZATIONAL LEARNING AS A PROCESS

The following ideas are generally accepted among researchers who approach organizational learning as a process:

Organizational learning is a fundamental aspect of the evolution of organization. Every organization learns, despite the way they operate. Whether this learning will result in organizational improvement ("good learning") cannot be assessed beforehand and should therefore be treated as a subject for research.

One of the first proponents of such an approach were Cyert and March (1963). In their *A Behavioral Theory of the Firm* they argued that organizations learn by adapting their objectives, attention, and search routines to their experiences. More than a decade later, March and Olsen (1976) showed that as a result of often irrational organizational behaviour, learning is full of hindrances and shortcomings.

Two years later the oft-cited book of Argyris and Schön (1978) was published. Just as March and Olsen had done, these authors argued that actual learning processes in organizations seldom result in positively valued changes. Organizations seem to have problems in thinking and acting outside existing theories in use. In the following years many review articles were published analysing various publications on organizational learning (e.g., Dodgson, 1993; Fiol & Lyles, 1985; Hedberg, 1981; Huber, 1991).

All these and other efforts notwithstanding, there is still a need for more scientific understanding of how to explicate actual organizational learning processes (Thatchenkery, 1996). For example, the traditional behaviouristic approach to learning seems to be problematic when applied to organizational learning (Weick, 1991). Besides that, the stimulus-response sequence is difficult to unravel; the combination of same stimulus, different response is rare in organizations. Organizations are too routine-based to follow this traditional learning sequence (Leavitt & March, 1988). Also, organizations do not provide the optimal (experimental) research site to unravel stimulus-response sequences. Many researchers also have difficulty differentiating between individual and organizational learning. Argyris and Schön (1978), for example, talk about organizations while in fact they are dealing with learning individuals within organizations.

In this article a broad definition of learning is used that emphasizes organizational knowledge construction: "Organizational learning is the process through which an organization constructs knowledge or reconstructs existing knowledge". The focus is on collective knowledge construction and is in line with more recent contributions to the organizational learning research stream (e.g., Brown & Duguid, 1991; Cook & Yanow, 1993; Elkjaer, 1999; Huysman, in press; Nicolini & Mezner, 1995; Pentland, 1995; Sims, 1999; Weick & Roberts, 1993). Those who perceive organizational learning as a process of (re)constructing organizational knowledge are all inspired by the social constructivist approach to knowledge development (Berger & Luckman, 1966; Gergen, 1994; Schutz, 1971). According to the social constructivist approach, organizational learning is seen as an institutionalizing process through which individual

knowledge becomes organizational knowledge. Institutionalization is the process whereby practices become sufficiently regular and continuous collective practices as to be described as institutions. The attention is on the process through which individual or local knowledge is transformed into collective knowledge as well as the process through which this socially constructed knowledge influences, and is part of, local knowledge. With organizational or collective knowledge reference is made to knowledge as in rules, procedures, strategies, activities, technologies, conditions, paradigms, frames of references, etc., around which organizations are constructed and through which they operate (Leavitt & March, 1988). It is important that organizational knowledge is capable of surviving considerable turnover in individual actors.

Next to constructing knowledge from within, knowledge can be gained through adapting to the environment. This learning from other organizations takes shape by reacting on feedback information from the environment or through assimilating knowledge from other organizations. Organizational learning happens when this external knowledge is being institutionalized within the organization.

These two processes of learning (learning from within and learning from others), seldom result in discontinuous changes. Discontinuous learning requires the introduction of creativity as part of organizational learning processes. In the next section this concept of learning will be explained more thoroughly.

LEARNING WITHIN ORGANIZATIONS

Berger and Luckman (1966) describe three phases or “moments” that can be discerned during institutionalizing knowledge: externalizing, objectifying, and internalizing. Externalizing refers to the process through which personal knowledge is exchanged with others. Objectifying refers to the process through which society becomes an objective reality. During internalizing, “the objectified social world is retrojected into consciousness in the course of socialization”. In relation to organizational learning processes, learning can be analysed as consisting of these three moments:

- *externalizing* individual knowledge such that knowledge becomes communicated
- *objectifying* this knowledge into organizational knowledge such that knowledge becomes taken for granted
- *internalizing* this organizational knowledge by members of the organization.

Figure 1 depicts in a highly simplistic manner this institutionalization process in relation to organizational learning.

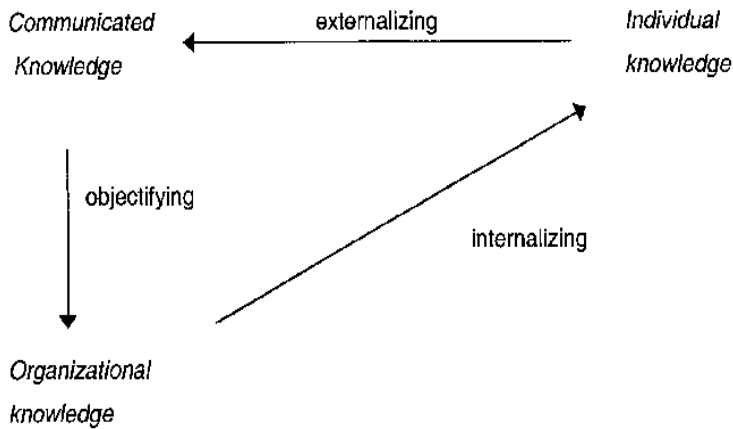


Figure 1. Learning as institutionalizing.

During the process of externalizing, personal knowledge is exchanged with others within the organization. Externalizing thus can also be considered “group learning” and takes shape formally, such as through meetings or project groups, and informally, for instance through storytelling (Sims, 1999). Next to face-to-face contact, externalizing can also be supported by information and communication technology, such as by telephone, GroupWare, etc. A well-known obstacle to externalizing personal knowledge is that such knowledge is often hard to express to others (Nonaka & Takeuchi, 1995; Polanyi, 1958). Also, individuals tend to hide personal beliefs. As a result, the learning within organizations often remains within existing “theories in use”, limiting the possibility of discontinuous or double loop learning (Argyris & Schön, 1978). An example can be taken from the following case study at the Dutch Railways (Huysman, 1996).

Over the years many conductors learn a more effective way to cope with passengers who cannot show a valid ticket. To them, fining every fine dodger with 60 guilders—which is a general rule—contradicts the Railways’ policy to be more service and client oriented. Therefore, they judge each individual case. When a passenger has a plausible reason for not having a valid ticket, they are asked to pay the regular ticket price. In all other cases, they will be fined according to the general rules of the Railways. These practices have been externalized to other conductors. As a result, many conductors share these informal practices. In other words, by externalizing individual experiences, individual learning becomes group learning.

When communicated or shared knowledge is confirmed by a dominant coalition within the organization, we can speak of objectified knowledge.

Objectified knowledge can be considered part of the organizational memory or organizational knowledge. Objectified knowledge can both be embedded, such as in reports or databases, but it can also remain in a flux, such as in stories and routines. As objectified knowledge strongly depends on the acceptance of a dominant coalition, power plays an important role during this process. Dominant coalitions formed for example by management, by a critical mass, or by reference groups, can negatively influence the learning process. Management for example might ignore actual day-to-day learning processes. This could result in objectified knowledge that does not correspond with actual learning processes within the organization (Brown & Duguid, 1991).

Take again the case of the train conductors. Although the informal practices are shared among several conductors, we cannot say the learning has resulted in organizational learning. This did not occur as these informal practices have not been accepted among management nor among a critical mass of conductors. Management would not accept the practices as it conflicts the formal organizational rule to fine every fare dodger. Moreover, management cannot accept it because they are not sufficiently aware of the daily practices of train conductors. Objectification of the shared knowledge or transforming group learning into organizational learning is also hampered by the fact that there are only occasional opportunities for train conductors to meet, communicate, and share learning experiences.

Through internalizing objectified knowledge, individuals become or stay members of the organization. In other words, internalizing organizational knowledge is the process of becoming an "insider". This process can be supported by structural methods such as manuals and training, or through less structured methods. Lave and Wenger (1991), for instance, have illustrated the importance of legitimate peripheral participating as a way to internalize objectified knowledge. "Learners need legitimate access to the periphery of communication—to computer mail, to formal and informal meetings, to telephone conversations, etc. and, of course to war stories. They pick up invaluable know how—not just information but also manner and technique—from being on the periphery of competent practitioners going about their business" (Brown & Duguid, 1991, p. 50). The process of internalization is often unbalanced. In the ideal case, mutual learning occurs in which the organization learns as much from individuals as the individual learns from the "organizational code" (March, 1991). As such, exploiting existing (organizational) knowledge is balanced with exploring new (individual) knowledge. In practice, however, organizations act as relatively slow learners, resulting in organizational conservatism (March, 1991).

Slow learning is also the case with the Dutch Railways as an organization. The Railways did not learn from the daily practices of the conductors. If the Railways did learn from its members, it might result in a change in the organizational rule of fining fare dodgers. In such a case, the organization would have learned from

its members. The outcome of this process—reconstructed organizational knowledge—would be used by newcomers in the process of internalizing organizational knowledge.

EXTERNAL LEARNING

Until so far, we discussed how, during personal interactions, individual knowledge becomes collective knowledge and how this knowledge in turn influences subsequent individual learning. As such, learning can be depicted as taking shape within a closed circle (see Figure 1). Of course, in practice this circle is never closed. Organizational members are always influenced by knowledge from sources other than the organization (Weick, 1991). Consequently, learning as institutionalizing as described earlier should include processes of adapting to external knowledge. Basically, adapting to external knowledge happens in two ways: by reacting on feedback information and by learning from experiences of other organizations. Because we are dealing with organizational members acquiring new knowledge, these forms of knowledge construction refer to individual learning processes. Only when this knowledge becomes externalized to other organizational members and objectified within the organization, can we speak of organizational learning. Figure 2 depicts this form of learning as an extension of learning through institutionalizing.

Learning by reacting to feedback information occurs when organizations learn from their own experiences by reacting to feedback information. This feedback information can be derived for example from customers responding to product quality and price, students responding to curricula, and citizens responding to social experiments. Hence, feedback learning requires communication with the environment and can occur through feedback instruments or through less formalized forms of communication. Examples are consumer research,

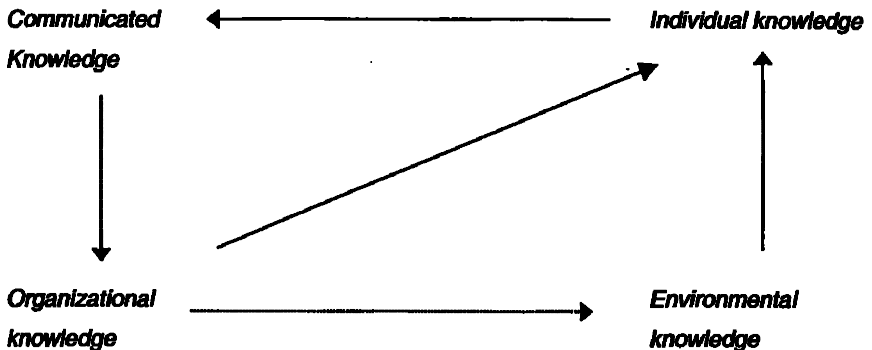


Figure 2. External learning as an extension of institutionalizing.

opportunities for public comment, and policy evaluation. Another way to gain new knowledge is through learning from the experiences of others (Leavitt & March, 1988). This learning takes place, for example, through gatekeepers and boundary spanners (Aldrich & Herker, 1977), through hiring newcomers (Huysman, in press), through inter-organizational co-operation (Powell, Koput, & Smith-Doerr, 1966), and through outsourcing, benchmarking, and consultants (Leavitt & March, 1988).

External learning, just as other forms of learning, is prone to miscommunication. Miscommunication can be caused by (a combination of), for instance, specialism and job division (March & Simon, 1993; Senge, 1990), defensive routines (Argyris & Schön, 1978), ego-centrism (Veld, Schaap, Termeer, & Twist, 1991; Westenhof, 1993), and past learning (Cohen & Levinthal, 1990; Leonard-Barton, 1995). These structural, cultural, and psychological factors limit the attention span of the organization resulting in "dynamic conservatism" (Schön, 1967). Dynamic conservatism refers to the idea that although the organization learns as it adapts to feedback information, the consequences of its learning are more a confirmation of its status quo than a change in its behaviour.

AN ORGANIZATIONAL LEARNING APPROACH TO THE LEARNING ORGANIZATION

A descriptive perspective on organizational learning leads to almost opposite insights than does the prescriptive perspective on the learning organization. Adherents of the organizational learning stream have the tendency to highlight the conservative and routine nature of the way organizations tend to learn. This viewpoint contradicts the one that characterizes adherents of the learning organization stream, who see learning as highly desirable. Instead of conservatism and rigidity, they highlight prosperity, improvement, and renewal as outcomes of learning. Although these two approaches to learning seem to contradict each other, combining the two approaches might provide insight in "good learning" and could provide us with ideas about learning organizations. A combination is possible when organizations organize their learning in ways such that conservatism and rigidity, as frequent outcomes of learning, are challenged. In this section, we will argue that this is possible when, during the various forms of learning as described in previous sections, innovative and usually unaccepted, or hidden knowledge is tolerated. In other words, a "good learning organization" is one in which the process of learning is organized such that the diffusion and adoption of new ideas and practices are not frustrated.

Brown and Duguid (1991), for example, argue that rigidity is often a result of managers not paying attention to creative (group-)learning processes. During their day-to-day activities, individuals in interaction continuously create new knowledge as a solution to daily problems. They create new ways of working,

give new interpretations of their situation, and discuss existing practices. In other words, whereas externalization practices can be highly innovative, the problem often lies in inflexible objectifying processes, as new individual knowledge is often not transformed into new organizational knowledge. Ethnographic research of the daily activities of repairmen at Rank Xerox (Orr, 1990), for example, illustrated that during interactions, people learn in highly creative ways. During training sessions, repairmen internalized organizational practices, all described in manuals. The general organizational rule they were supposed to learn was that manuals should be used when diagnosing technical disturbances. If the problem persists, the copier-machine should be replaced. The informal practices, however, were different: There was an unspoken rule that replacing copier-machines was a sign of one's technical incompetence. As a consequence, repairmen were highly motivated to fix technical disturbances so as to avoid being perceived as such. If they were unable to do this on their own, they contacted each other to help diagnose problems. This newly created knowledge concerning solutions to new problems was subsequently exchanged among others. The problem, however, was that this knowledge remained informal and "situated"; management remained ignorant about these creative learning processes. In other words, this newly communicated knowledge did not transform into organizational knowledge. Taking this story as an illustrative lesson for "good learning", it implies that learning organizations should be more aware of the learning taking place during daily activities. As various researchers have empirically illustrated, it is often during these day-to-day work processes that new knowledge is created, leading to organizational improvement and renewal (e.g., Brown & Duguid, 1991; Ciborra & Lanzara, 1994; Cook & Yanow, 1993; Easterby-Smith, Snell, & Gherardi, 1998; Elkjaer, 1999; Weick & Roberts, 1993).

Next to "good learning" resulting from acknowledging hidden (group-)learning processes, "good learning" might result when external learning incorporates innovative knowledge. This implies for instance that learning organizations should be able to interpret feedback information in more creative ways. Organizational members could exchange different personal interpretations of the received feedback information, possibly supported by Group Decision Support Systems (Boland, Tenkasi, & Te'eni, 1991). Through such explorative sessions, old interpretations can be changed and new ideas might emerge. Another way for creative feedback learning is to simulate feedback (March, Sproull, & Tamuz, 1991). Data warehousing is another technology that is well designed to support creative feedback learning. Through data warehousing, organizations are able to explore information that has been gained from their environment—in most cases its customers—in order to search for new combinations and possible gaps in the present supply.

Learning from unexpected or non-traditional knowledge during learning from others can also result in innovation and change and as such might contribute to

the creation of learning organizations. Flexibility results for example when organizational members are open towards seemingly irrelevant external information. According to Koestler (1964) this is one of the most general forms of creativity: "The most important feature of original experimental thinking is the discovery of overlap and agreement where formerly only isolation and difference was recognized" (p. 232). Inviting guests whose past experiences and interests differ at first hand from that of the organization could result in new organizational insights. Organizations also do better not focusing too much on benchmark studies in order to compare themselves with other organizations in the same field. Although benchmark studies do have their own valuable purposes, analysing and assessing organizations within other fields might spur innovative insights. Of course, the World Wide Web is an interesting tool to do so (Huysman, 1996).

A good learning organization is one that organizes its learning such that the diffusion and adoption of new ideas are not unnecessarily hindered by the past. Of course, this is easier to say than to do. Incorporating creativity within learning processes does not necessarily result in "good learning". Besides the fact that too much creativity might result in chaotic situations (March, 1991), creative forms of learning often do not reach the stage of organizational learning. This is because the products of creative learning processes are only sporadically transformed into organizational knowledge. As mentioned, management often has problems acknowledging creative day-to-day processes, and organizations seldom have the time, money, and patience to wait and see if creative learning processes will be successful in the end. Given that organizations are predominantly short-term oriented and given also that most new ideas are bad ones, potential innovators are frequently confronted with impatience from the side of management (Levinthal & March, 1993). As these managers often play the role of gatekeepers, much of the newly created knowledge within the organization remains shared among a group of practitioners and will not become objectified into organizational knowledge. Consequently, management has a significant part to play in stimulating a good learning organization. They should be more aware of innovation during day-to-day activities, and be more open towards new interpretations and learning from seemingly irrelevant fields of knowledge. These possibilities together require openness, tolerance, and hospitality towards learning within the organization. This open attitude implies that organizational practitioners interested in creating a good learning organization should first of all engage in self-reflection. One important way to do so is continuously questioning the ongoing learning processes. Are they aware of learning processes that occur during day-to-day activities? How is local knowledge exchanged among members? How does this knowledge become organizational knowledge? How does the organization cope with external knowledge, with feedback information,

and with experiences of other organization? To what extent is the organization tolerant and open towards new knowledge? Is there enough creativity within these learning processes? Are the various forms of learning balanced, etc.?

Self-reflection should not be seen as a first step towards a good learning organization. Creating a good learning organization is a continuous learning process in itself instead of a fixed process with a clear end result. Although conditions to avoid learning problems can create positive effects in the short run, in the long run these same conditions might result in stagnation of learning processes. In fact, as various writers on organizational learning processes argue, too much structuring can stimulate path dependency such that past decisions can exclude future learning strategies.

REFERENCES

- Aldrich, H., & Herker, D. (1977). Boundary spanning roles and organizational structure. *Academy of Management Review*, April, 217–230.
- Argyris, C., & Schön, D. (1978). *Organizational learning: A theory of action-perspective*. Reading, MA: Addison-Wesley.
- Berger, P., & Luckman, T. (1966). *The social construction of knowledge*. London: Penguin Books.
- Boland, R.J., Tenkasi, R.V., & Te'eni, D. (1994). Designing information technology to support distributed cognition. *Organization Science*, 5(3), 456–475.
- Brown, J.S., & Duguid, P. (1991). Organizational learning and communities-of-practice: Towards a unified view of working, learning, and innovation. *Organizational Science*, 2(1), 40–57.
- Ciborra, C.U., & Lanzara, G.F. (1994). Formative contexts and information technology: understanding the dynamics of innovation in organizations. *Accounting, Management and Information Technology*, 4(2), 61–86.
- Cohen, M.D., & Levinthal, D. (1990). Absorptive capacity: A new perspective on learning and innovation. *Administrative Science Quarterly*, March, 128–152.
- Cook, S.D.N., & Yanow, D. (1993). Culture and organizational learning. *Journal of Management Inquiry*, 2(4), 373–399.
- Cyert, R.M., & March, J.G. (1963). *A behavioral theory of the firm*. Englewood Cliffs, NJ: Prentice Hall.
- Dodgson, M. (1993). Organizational learning: A review of some literatures. *Organization Studies*, 14(3), 375–394.
- Easterby-Smith, M., Burgoyne, J., & Araujo, L. (Eds.). (1999). *Organizational learning and the learning organization: Developments in theory and practice*. London: Sage.
- Easterby-Smith, M., Snell, R., & Gherardi, S. (1998). Organizational learning: Diverging communities of practice. *Management Learning*, 29(3), 259–272.
- Elkjaer, B. (1999). In search of a social learning theory. In M. Easterby-Smith, J. Burgoyne, & L. Araujo (Eds.), *Organizational learning and the learning organization: Developments in theory and practice*. Sage.
- Fiol, C.M., & Lyles, M.A. (1985). Organizational learning. *Academy of Management Review*, 10(4), 803–813.
- Garvin, D.A. (1993). Building a learning organization. *Harvard Business Review*, 71(4), 78–91.
- Gergen, K.J. (1994). *Realities and relationships: soundings in social construction*. Cambridge, MA: Harvard University Press.

- Hedberg, B.L.T. (1981). How organizations learn and unlearn. In P.C. Nystrom & W.H. Starbuck (Eds.), *Handbook of organization design* (Vol. 1, pp. 3–27). Oxford, UK: Oxford University Press.
- Huber, G.P. (1991). Organizational learning: The contributing processes and the literatures. *Organizational Science*, 2(1), 88–115.
- Huysman, M.H. (1996). *Dynamics of organizational learning*. Amsterdam: Amsterdam Thesis Publishers.
- Huysman, M.H. (in press). Rethinking organizational learning: Analyzing learning processes of information system designers. *Accountancy Management and Information Technology*, 10.
- Huysman, M.H., & van der Vlist, R. (1998). Naar een “organizational learning”—benadering van der lerende organisatie. *Gedrag & Organisatie*, 11(5), 219–231.
- Koestler, A. (1964). *The act of creation*. London: Arkana.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge, UK: Cambridge University Press.
- Leavitt, B., & March, J.G. (1988). Organizational learning. *Annual Review of Sociology*, 14, 319–340.
- Leonard-Barton, D. (1995). *Wellsprings of knowledge: Building and sustaining the sources of innovation*. Boston, MA: Harvard Business School Press.
- Levinthal, D., & March, J.G. (1993). The myopia of learning. *Strategic Management Journal*, 14, 95–112.
- Mackenzie, K.D. (1994). The science of an organization: Part I. A new model of organizational learning. *Human Systems Management*, 13, 248–258.
- March, J.G. (1991). Exploration and exploitation in organizational learning. *Organizational Science*, 2(1), 71–87.
- March, J.G., & Olsen, J.P. (1976). *Ambiguity and choice in organizations*. Bergen, Norway: Universitetsforlaget.
- March, J.G., & Simon, H.A. (1993). *Organizations* (2nd ed.). Cambridge, MA: Blackwell.
- March, J.G., Sproull, L.S., & Tamuz, M. (1991). Learning from samples of one or fewer. *Organizational Studies*, 2(1), 1–13.
- Marquardt, M. (1996). *Building the learning organization*. New York: McGraw-Hill.
- Nicolini, D., & Mezner, M.B. (1995). The social construction of organizational learning: Conceptual and practical issues in the field. *Human Relations*, 48(7), 727–746.
- Nonaka, I. (1988). The knowledge-creating company. *Harvard Business Review*, November–December, 96–104.
- Nonaka, I., & Takeuchi, H. (1995). *The knowledge creating company*. New York: Oxford University Press.
- Orr, J.E. (1990). Sharing knowledge, celebrating identity: Community memory in a service culture. In P. Middleton, D. Edwards, et al. (Eds.), *Collective remembering: Memory in society*. London: Sage Publications.
- Pedler, M., Burgoyne, J., & Boydell, T. (1991). *The learning company*. McGraw-Hill Book Company.
- Pentland, B.T. (1995). Information systems and organizational learning: The social epistemology of organizational knowledge systems. *Accounting, Management and Information Technology*, 5, 1–21.
- Polanyi, M. (1958). *The tacit dimension*. New York: Anchor.
- Powell, W.W., Koput, K.W., & Smith-Doerr, L. (1996). Interorganizational collaboration and the locus of innovation: Networks of learning in biotechnology. *Administrative Science Quarterly*, 41(1), 116–145.
- Schön, D.A. (1967). *Technology and change*. New York: Delacorte.
- Schutz, A. (1971). *Collected papers, Vols. 1 and 2*. The Hague, The Netherlands: Nijhoff.

- Senge, P. (1990). *The fifth discipline, the art and practice of the learning organization*. London: Random House.
- Sims, D. (1999). Organizational learning as the development of stories. In M. Easterby-Smith, Araujo, L., & J. Burgoyne (Eds.), *Organizational learning and the learning organization: Developments in theory and practice* (pp. 44–59). London: Sage.
- Swieringa, J., & Wierdsma, A.F.M. (1993). *Becoming a learning organization*. Reading, MA: Addison-Wesley.
- Thatchenkery, T.J. (1996). Organizational learning, language games and knowledge creation (editorial note). *Journal of Organizational Change Management*, 9(1), 4–11.
- Tsang, E.W.K. (1997). Organizational learning and the learning organization: A dichotomy between descriptive and prescriptive research, *Human Relations*, 50(1), 73–89.
- Veld, R.J. in 't, Schaap, L., Termeer, C.J.A.M., & Twist, M.J.W. (Eds.). (1991). *Autopoiesis and configuration theory: New approaches to societal steering*. Dordrecht, The Netherlands: Kluwer.
- Westenholz, A. (1993). Paradoxical thinking and change in the frames of references. *Organizational Studies*, 14, 37–59.
- Weick, K.E. (1991). The non-traditional quality of organizational learning. *Organization Science*, 2, 116–124.
- Weick, K.E., & Roberts, K.H. (1993). Collective mind in organizations: Heedful interrelating on flight decks. *Administrative Science Quarterly*, 38(3), 357–381.
- Weick, K.E., & Westley, F. (1996). Organizational learning: Affirming an oxymoron. In S.R. Clegg, C. Hardy, & W.R. Nord (Eds.), *Handbook of organization studies*. London: Sage Publications.